

Exhibit 12 Part 15

Part 6 of Attachment L to the Allocation Recommendation Report (ARR2484-ARR2574)

United States' Motion to Enter Consent Decree,
United States v. Alden Leeds, Inc. et al., Civil Action No. 22-7326 (D.N.J.)

Allocation Facility Cmass Calculation

Honeywell International, Inc.

65 Lodi Street

Passaic

NJ

07055

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COCHC Mass
Copper	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Mercury	100.00%	0.43	100.00%	-	2.32%	-	100.00%	-	0.43	1.018817E-2	0
HPAHs	100.00%	0.73	100.00%	-	2.32%	-	100.00%	-	0.73	1.018817E-2	0.01
LPAHs	100.00%	1.22	100.00%	0.60	2.32%	1.52	100.00%	-	1.86	1.018817E-2	0.02
PCBs	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Honeywell International, Inc.

65 Lodi Street

Passaic

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07055

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0	0	0
Mercury	0.95	42,000.00	0	1.043E-7	9.909E-8
HPAHs	0.05	240,000.00	0.01	3.099E-8	1.549E-9
LPAHs	0.01	170,000.00	0.02	1.114E-7	1.114E-9
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Honeywell International, Inc.

65 Lodi Street

Passaic

NJ

07055

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	0	0	0	0	0
Mercury	0.95	42,000.00	4,322.53	41,955.96	9.948E-5	0	4.17	9.948E-5	9.450E-5
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	1.680E-7	0.01	0.03	1.680E-7	8.398E-9
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	6.167E-7	0.02	0.09	6.167E-7	6.167E-9
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Honeywell International, Inc.

65 Lodi Street

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Yantacaw	Bypass	2.32%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
4,000	gal discharged per day/week/month	No information, estimated based on Essex Chemical
24	# hours/per day discharged	PAS-00109714, ECRA Investigation - no evidence of direct discharge to Passaic River
7	#days/week discharged	PAP00197571, 1978 Trip Report Memorandum - Municipal water and sanitary to municipal water system
52	#weeks/yr discharged	No Permits
1,456,000	calc gal/yr discharge	No Information on Sewer Flows or COCs
1899	Yr Ops started	
1976	Yr Ops ceased	FDR page 2
77	calc #yrs facility operated	
Copper (Cu)		
77	#yrs facility discharged	
-	calc mg/L COC discharged	From Essex Chemical
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
77	#yrs facility discharged	
-	calc mg/L COC discharged	From Essex Chemical
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
77	#yrs facility discharged	
-	calc mg/L COC discharged	From Essex Chemical
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
77	#yrs facility discharged	
-	calc mg/L HPAHs	From Essex Chemical
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
77	#yrs facility discharged	
0.005	calc mg/L LPAHs	From Essex Chemical
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
2.12	calc kg COC discharged	
PCBs		
0	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
0	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
27	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
77	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
31	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
32	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
-	kg HPAHs	
2.12	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.
	2 ACRES - TOTAL SITE AREA (acres)	PAP-00101453; PAS-00047956; FDR (page 1)	
	0.75 ACRES - AFFECTED AREA	Rough estimate of site area with exposed fill determined from review of historical aerial photographs 1995-2020 (Google Earth) and Figure 1 Allocation Facilities map.	
	4,046.86 METERS ² /ACRE		
	3,035 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	0 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED	
	1899 Year site operations began	General Chemical (predecessor to Allied Chemical & Dye Corp and Honeywell International Inc.) purchased the site from Dundee Chemical Works in 1899 (PAP-00198135).	
	1987 Year site processing and storage operations ceased	Allied Chemical & Dye Corp granted a portion of the site on eighth street to Donori Corp on 8/30/1954 (PAP-00198148). Allied Corporation sold facility site on 5/18/1987 (PAP-00198137-38)	
	88 NUMBER YEARS DISCHARGE		
	27 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1,963 KG/M ³ SOIL DENSITY	Surface soil is fill material characterized by the presence of loose, poorly sorted sand, silt and clay which contained cobbles, brick, ceramics, glass, wood, and ash waste (FDR p 10). Density of silty sand and gravel ranges from 1442 to 2483 kg/m ³ , so the average is used. (http://structx.com/Soil_Properties_002.html)	
	52,430 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
Copper (Cu)	88 YEARS DISCHARGED 0 MG/KG (MAX CONCENTRATION)	This site is located on historic fill (FDR pg 9)	
	0.000001 kg per mg (Merck Index)	Sample Area I max concentration = 257 mg/kg (surface soil sample at I4) (PAP-00101548-60). Set to 0 since less than HF.	
Lead (Pb)	0 KILOGRAMS DISCHARGED 88 YEARS DISCHARGED 0 MG/KG (AVERAGE CONCENTRATION)	Maximum lead concentration 8030 mg/kg at Area E (PAP-00102025-28; PAS-00047150). Set to 0 since less than HF.	
Mercury (Hg)	0.000001 kg per mg (Merck Index)	Maximum mercury concentration 8.2 mg/kg @ Area I location I4 (PAP-00101548, 60).	
	0 KILOGRAMS DISCHARGED 88 YEARS DISCHARGED 8.2 MG/KG (MAX CONCENTRATION)		
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	0.000001 kg per mg (Merck Index)	total concentration of PAH compounds for Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample .	
	0 KILOGRAMS DISCHARGED 88 YEARS DISCHARGED 14.0 MG/KG (TOTAL PAH MAX CONCENTRATION)	Carcinogenic PAH concentrations reflect a single sample close to the surface, sample I-4 (0-0.5 ft bgs). (PAP-00101560) Historic fill was not a consideration for PAH concentrations for the purpose of this calculation.	
PAHs (others detected)	0.000001 kg per mg (Merck Index)	Data below the Benzo(a)pyrene Equivalent Table	
	1 KILOGRAMS DISCHARGED 88 YEARS DISCHARGED 23 MG/KG (TOTAL PAH MAX CONCENTRATION)	Concentration reflects a single sample close to the surface, sample I-1 (1.5-2 ft bgs) (PAP-00101560). Historic fill was not a consideration for PAH concentrations for the purpose of this calculation.	
	0.000001 kg per mg (Merck Index)		
	1 KILOGRAMS DISCHARGED		

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	9.230	1.0	9.2300
Benzo(a)anthracene	7.910	0.1	0.7910
Benzo(b)fluoranthene	9.820	0.1	0.9820
Benzo(k)fluoranthene	6.840	0.01	0.0684
Chrysene	8.900	0.001	0.0089
Dibenz(a,h)anthracene	2.330	1.0	2.3300
Indeno(1,2,3-cd)pyrene	5.970	0.1	0.5970

Total Benzo(a)pyrene Equivalents = 14.0

PCBs

88 YEARS DISCHARGED
0 MG/KG (MAX OF REPORTED CONCENTRATIONS)
0.000001 kg per mg (Merck Index)

None detected (PAP-00102011)

0 KILOGRAMS DISCHARGED

DDx

0 YEARS DISCHARGED within DDX Timeline
MG/KG (MAX CONCENTRATION)
3.785 L per gallon (Merck Index)
0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED

Dieldrin

0 YEARS DISCHARGED within Dieldrin Timeline
MG/KG (MAX CONCENTRATION)
3.785 L per gallon (Merck Index)
0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED

Dioxins/Furans

NONE FOUND IN AVAILABLE DOCUMENTATION

Sample I-1 (1.5-2 ft bgs) (PAP-00101560)	
Anthracene	1.3
Acenaphthene	0.36
Acenaphthylene	0.28
Fluorene	0
Naphthalene	0.33
Phenanthrene	21
SUM	23.27

0 YEARS DISCHARGED
0 MG/KG (MAX CONCENTRATION)
0.000001 kg per mg (Merck Index)

0 calc kg COC discharged

SUMMARY CMASS ESTIMATES:

0.00 kg Copper
0.00 kg Lead
0.43 kg Mercury
0.73 kg PAHs (Benzo(a)pyrene Equivalent)
1.22 kg PAHs (Other)
0.00 kg PCBs
0.00 kg DDX
0.00 kg Dieldrin
0.00 kg Dioxins/Furans

2.38 MASS (KG) DISCHARGED FROM SURFACE SOIL

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Honeywell International, Inc.**65 Lodi Street****Passaic****NJ****07055**

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
1.018E-7	0.0%	Historically Compliant or No Evidence	Soil staining observed in Areas E and F. Area H contained a former drum wash disposal pit area that has been filled with cement preventing access to the pit. No information on NOVs was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	8.140E-8
						AP_ABS 8.140E-8

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Honeywell International, Inc.**65 Lodi Street****Passaic****NJ****07055**

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
9.452E-5	0.0%	Historically Compliant or No Evidence	Soil staining observed in Areas E and F. Area H contained a former drum wash disposal pit area that has been filled with cement preventing access to the pit. No information on NOVs was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	7.562E-5
						AP_ABS 7.562E-5

Allocation Facility Cmass Calculation

ISP Chemicals LLC

1 Main Street;11 William Street

Belleville

NJ

07109

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic CMass
Copper	100.00%	-	100.00%	-	0.00%	5,583.48	100.00%	-	0	1.018817E-2	0
Lead	100.00%	9.92	100.00%	-	0.00%	115.76	100.00%	-	9.92	1.018817E-2	0.1
Mercury	100.00%	5.97	100.00%	-	0.00%	0.68	100.00%	-	5.97	1.018817E-2	0.06
HPAHs	100.00%	0.37	100.00%	-	0.00%	713.60	100.00%	-	0.37	1.018817E-2	0
LPAHs	100.00%	0.65	100.00%	-	0.00%	475.73	100.00%	-	0.65	1.018817E-2	0.01
PCBs	100.00%	524.43	100.00%	-	0.00%	-	100.00%	-	524.43	1.018817E-2	5.34
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

ISP Chemicals LLC

1 Main Street;11 William Street

Belleville

NJ

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0.1	3.158E-8	3.158E-10
Mercury	0.95	42,000.00	0.06	1.448E-6	1.376E-6
HPAHs	0.05	240,000.00	0	1.571E-8	7.853E-10
LPAHs	0.01	170,000.00	0.01	3.895E-8	3.895E-10
PCBs	12.87	26,000.00	5.34	2.055E-4	2.645E-3
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

ISP Chemicals LLC

1 Main Street;11 William Street

Belleville

NJ

07109

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	3.438E-5	0.1	109.9	3.438E-5	3.438E-7
Mercury	0.95	42,000.00	4,322.53	41,955.96	1.381E-3	0.06	57.95	1.381E-3	1.312E-3
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	8.513E-8	0	0.02	8.513E-8	4.256E-9
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	2.157E-7	0.01	0.03	2.157E-7	2.157E-9
PCBs	12.87	26,000.00	20,066.54	25,795.56	2.613E-2	5.34	674.16	2.613E-2	3.364E-1
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

ISP Chemicals LLC

1 Main Street;11 William Street

Belleville

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	Flow data available
	# hours/per day discharged	1990 4th quarter = 9774683 gallons
	#days/week discharged	1991 First and Second quarters = 1637501 and 3642966 gallons
	#weeks/yr discharged	Discharged process water, sanitary waste and storm water to PVSC no discharges to Passaic River
39,977,228	calc gal/yr discharge (FDR)	
365	#day per yr operated (FDR)	
1992	Yr Ops started (FDR)	
2003	Yr Ops ceased (FDR)	
9	calc #yrs facility operated	
Copper (Cu)		
9	#yrs facility discharged	
4.10	calc mg/L COC discharged	Based on Goodrich
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
5,583	calc kg COC discharged	
Lead (Pb)		
9	#yrs facility discharged	Based on Purdue sampling data from 1990
0.085	calc mg/L COC discharged; (FDR) PAP00128020	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
115.76	calc kg COC discharged	
Mercury (Hg)		
9	#yrs facility discharged	
0.0005	calc mg/L COC discharged; (FDR)	Based on Goodrich
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.68	calc kg COC discharged	
HPAHs		
9	#yrs facility discharged	
8.7	calc mg/L O&G (FDR)	Based on Goodrich
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as HPAHs	
1	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
714	calc kg COC discharged	
LPAHs		
9	#yrs facility discharged	
8.7	calc mg/L O&G (FDR)	Based on Goodrich
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as LPAHs	
0	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
476	calc kg COC discharged	
PCBs		
-14	#yrs facility discharged within PCBs Timeline	
	calc mg/kg	
0.0075%	assumed %mg of material in conveyance carried away via 1L discharge flow through the conveyance	
	calc gal/yr discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-19	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
-4	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
9	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
10	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
-6	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
-16	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
5,583	kg Copper	
116	kg Lead	
1	kg Mercury	
714	kg HPAHs	
476	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	

-	kg Dioxins/Furans	
		[REDACTED]

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.
	2.28 ACRES - TOTAL SITE AREA (acres)	FDR page 1	
	1.5350 ACRES - AFFECTED AREA	2 parcels, 0.79 acres (chemical plant south of William Street) and 1.49 acres (warehouses north of William Street) (PAS-00110586)	AOC #14 - Historic Filling Station (1.49 acres) (PAP-00092630)
	4,046.86 METERS ² /ACRE		
	6,212 METERS ³ (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	0.62119 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED	
	1991 Year site operations began	The portion of the subject property south of Williams Street has been used for chemical manufacturing since approximately 1940 (PAP-00092587).	
	2020 Year site operations ceased	ISP Van Dyk, Inc. ceased operations at the facility on or about March 31, 2001 (PAS-00110294).	
	29 NUMBER YEARS DISCHARGE		
	18 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1,843 KG/M ³ SOIL DENSITY	Fill reported fine to coarse silty sands (PAP-00093882). Bulk density range 1410 KG/M ³ to 2275 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)	
	33,192 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
		The Allocation Team has determined that the facility site is not located on regional Historic Fill (FDR pg 6)	
Copper (Cu)	29 YEARS DISCHARGED		
	MG/KG (MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
Lead (Pb)	29 YEARS DISCHARGED		
	299 MG/KG (AVERAGE CONCENTRATION)	PAP-00092672	
	0.000001 kg per mg (Merck Index)		
	10 KILOGRAMS DISCHARGED		
Mercury (Hg)	29 YEARS DISCHARGED		
	180.0 MG/KG (MAX CONCENTRATION)	PAP-00092676 (surface sample)	
	0.000001 kg per mg (Merck Index)		
	6 KILOGRAMS DISCHARGED		
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	AOC 27, Sample A27-9A (2-2.5 ft bgs) (PAP-00092687)	Total concentration of PAH compounds for Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample.	
	29 YEARS DISCHARGED		
	11.1 MG/KG (TOTAL PAH AVERAGE CONCENTRATION)	Sum of Benzo(a)pyrene Equivalent conversion concentrations using maximum concentrations listed in FDR TABLE, PAGE 7.	
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
PAHs (others detected)	29 YEARS DISCHARGED		
	20 MG/KG (TOTAL PAH MAX CONCENTRATION)	AOC 27, Sample A27-9A (2-2.5 ft bgs) (PAP-00092687)	
	0.000001 kg per mg (Merck Index)	Revised to delete HMW PAHs.	
	1 KILOGRAMS DISCHARGED		

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	7.640	1.0	7.6400
Benzo(a)anthracene	8.050	0.1	0.8050
Benzo(b)fluoranthene	5.800	0.1	0.5800
Benzo(k)fluoranthene	5.560	0.01	0.0556
Chrysene	8.580	0.001	0.0086
Dibenz(a,h)anthracene	1.580	1.0	1.5800
Indeno(1,2,3-cd)pyrene	4.390	0.1	0.4390

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents =

11.1

PCBs

29 YEARS DISCHARGED
15,800 MG/KG (MAX OF REPORTED CONCENTRATIONS)
0.000001 kg per mg (Merck Index)

1 to 1.5 ft bgs samples(PAP-00092658, 90)

524 KILOGRAMS DISCHARGED
DDx

0 YEARS DISCHARGED within DDx Timeline
MG/KG (MAX CONCENTRATION)
3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED
Dieldrin

0 YEARS DISCHARGED within Dieldrin Timeline
MG/KG (MAX CONCENTRATION)
3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED
Dioxins/Furans

NOT DETECTED (FDR)

0 YEARS DISCHARGED
MG/KG (MAX CONCENTRATION)
0.000001 kg per mg (Merck Index)

0 calc kg COC discharged

SUMMARY CMASS ESTIMATES:

0.00 kg Copper
9.92 kg Lead
5.97 kg Mercury
0.37 kg PAHs (Benzo(a)pyrene Equivalent)
0.65 kg PAHs (Other)
524.43 kg PCBs
0.00 kg DDx
0.00 kg Dieldrin
0.00 kg Dioxins/Furans

541.35 MASS (KG) DISCHARGED FROM SURFACE SOIL

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

ISP Chemicals LLC

1 Main Street;11 William Street

Belleville

NJ

07109

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
2.646E-3	0.0%	Historically Compliant or No Evidence	According to the 2002 Preliminary Assessment, the property was inspected by a representative of the NJDEP on June 14, 2001. The NJDEP inspector noted several areas of stained floors, paving, and walls during the site inspection. No information on NOVs was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.117E-3
						AP_ABS 2.117E-3

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

ISP Chemicals LLC

1 Main Street;11 William Street	Belleville	NJ	07109
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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
3.377E-1	0.0%	Historically Compliant or No Evidence	According to the 2002 Preliminary Assessment, the property was inspected by a representative of the NJDEP on June 14, 2001. The NJDEP inspector noted several areas of stained floors, paving, and walls during the site inspection. No information on NOVs was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.701E-1
						AP_ABS 2.701E-1

Allocation Facility Cmass Calculation

Kearny Smelting & Refining

936 Harrison Ave

Kearny

NJ

07032

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic CMass
Copper	100.00%	12,847.65	100.00%	-	0.27%	11,360.27	100.00%	318.2	13,196.61	1.018817E-2	134.45
Lead	100.00%	-	100.00%	-	0.27%	161,586.89	100.00%	4,526.6	4,963.53	1.018817E-2	50.57
Mercury	100.00%	2.41	100.00%	-	0.27%	0.35	100.00%	-	2.42	1.018817E-2	0.02
HPAHs	100.00%	4.36	100.00%	-	0.27%	3.36	100.00%	0.1	4.46	1.018817E-2	0.05
LPAHs	100.00%	4.68	100.00%	-	0.27%	3.93	100.00%	0.1	4.8	1.018817E-2	0.05
PCBs	100.00%	5.31	100.00%	-	0.27%	2.67	100.00%	0.3	5.57	1.018817E-2	0.06
DDx	100.00%	-	100.00%	-	0.27%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.27%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.27%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Kearny Smelting & Refining

936 Harrison Ave

Kearny

NJ

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	134.45	6.402E-5	4.418E-5
Lead	0.01	3,200,000.00	50.57	1.580E-5	1.580E-7
Mercury	0.95	42,000.00	0.02	5.872E-7	5.579E-7
HPAHs	0.05	240,000.00	0.05	1.895E-7	9.473E-9
LPAHs	0.01	170,000.00	0.05	2.877E-7	2.877E-9
PCBs	12.87	26,000.00	0.06	2.182E-6	2.808E-5
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Kearny Smelting & Refining

936 Harrison Ave

Kearny

NJ

07032

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	4.765E-2	134.45	99,926.4	4.765E-2	3.288E-2
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	1.720E-2	50.57	54,989.41	1.720E-2	1.720E-4
Mercury	0.95	42,000.00	4,322.53	41,955.96	5.600E-4	0.02	23.5	5.600E-4	5.320E-4
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	1.027E-6	0.05	0.2	1.027E-6	5.134E-8
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	1.593E-6	0.05	0.22	1.593E-6	1.593E-8
PCBs	12.87	26,000.00	20,066.54	25,795.56	2.775E-4	0.06	7.16	2.775E-4	3.571E-3
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Kearny Smelting & Refining

936 Harrison Ave

Kearny

NJ

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Worthington Ave	CSO	0.48%	56.33%	No metering was done at this location for the Killiam report. CSO percentages were calculated by the median of all CSOs in the Harrison municipality

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	No information on Discharge Flows or COCs
	# hours/per day discharged	Estimating based on Revere Smelting and Refining
	#days/week discharged	Information states that all buildings were connected to the PVSC so assuming everything to PVSC
	#weeks/yr discharged	
2,500,000	calc gal/yr discharge	
1944	Yr Ops started	
2020	Yr Ops ceased	
76	calc #yrs facility operated	
Copper (Cu)		
76	#yrs facility discharged	Estimated based on Revere
15.80	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
11,360.27	calc kg COC discharged	
Lead (Pb)		
76	#yrs facility discharged	Estimated based on Revere
224.69	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
161,586.89	calc kg COC discharged	
Mercury (Hg)		
76	#yrs facility discharged	Estimated based on Revere
0.00049	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.352	calc kg COC discharged	
HPAHs		
76	#yrs facility discharged	Estimated based on Revere
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as HPAHs	
0.0047	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
3.36	calc kg COC discharged	
LPAHs		
76	#yrs facility discharged	Estimated based on Revere
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as LPAHs	
0.0055	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
3.93	calc kg COC discharged	
PCBs		
34	#yrs facility discharged within PCBs Timeline	Estimated based on Revere
0.008	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
2,670318	calc kg COC discharged	
DDx		
29	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
38	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
76	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
75	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
11,360.27	kg Copper	
161,586.89	kg Lead	
0.35	kg Mercury	
3.36	kg HPAHs	
3.93	kg LPAHs	
2.67	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	
	# days/week discharged	
	# weeks/yr discharged	
2,661.291	# gals/yr directly discharged	
	4.08 ft; 30yr average annual precipitation per Rutgers information	
	43,560 ft ² per acre	
	4.00 acres	
	50% Percent Precip to River	
	1970 Yr Ops started	
	1972 Yr Ops ceased	
	2 calc #yrs facility operated	
Copper (Cu)		
	2 #yrs facility discharged	
	15.80 calc mg/L COC discharged PAP0012591-3	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	318.24 calc kg COC discharged	
Lead (Pb)		
	2 #yrs facility discharged	
	224.69 calc mg/L COC discharged PAP0012591-3	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	4,526.63 calc kg COC discharged	
Mercury (Hg)		
	2 #yrs facility discharged	
	0.00049 calc mg/L COC discharged PAP0012591-3	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	0.010 calc kg COC discharged	
HPAHs		
	2 #yrs facility discharged	
	0.0047 calc mg/L COC discharged PAP0012591-3	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	0.0942 calc kg COC discharged	
LPAHs		
	2 #yrs facility discharged	
	0.0055 calc mg/L COC discharged PAP0012591-3	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	0.1100 calc kg COC discharged	
PCBs		
	3 #yrs facility discharged within PCBs Timeline	
	0.008 calc mg/L COC discharged	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	0.25 calc kg COC discharged	
DDx		
	3 #yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	- calc kg COC discharged	
Dieldrin		
	3 #yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	- calc kg COC discharged	
Dioxins/Furans		
	2 #yrs facility discharged	
	calc mg/L COC discharged	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	- calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
	3 #yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	- calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
	3 #yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	- calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
	3 #yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	- calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
	318.24 kg Copper	
	4,526.63 kg Lead	
	0.0099 kg Mercury	
	0.0942 kg HPAHs	
	0.1100 kg LPAHs	
	0 kg PCBs	
	- kg DDx	

- kg Dieldrin	
- kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.
	11.8 ACRES - TOTAL SITE AREA (acres)	FDR, Page 1	
	8 ACRES - AFFECTED AREA	Approximately one third of site is covered by either buildings or impervious pavement (PAS-00032552).	No off-site migration or discharge of water from the lagoon occurred because there is no surface water pathway to the surrounding environment (PAP-00004536) and the lagoon on site is completely landlocked (PAP-00004634).
	4,046.86 METERS²/ACRE		
	32,375 METERS² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	3 METERS³/YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED TO PASSAIC RIVER	
	1944 Year site operations began 2020 Year site processing and storage operations ceased	FDR, Page 2 FDR, Page 2	
	76 NUMBER YEARS DISCHARGE		
	246 METERS³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1,963 KG/M³ SOIL DENSITY	Site reported as located on Historic Fill (FDR, Page 7). Historic Fill reported as sand with silt and fine gravel. Bulk density range for silty sand and gravel 1442 KG/M ³ to 2483 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)	
	482,994 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)	Site reported as located on Historic Fill (FDR, Page 7).	
Copper (Cu)	76 YEARS DISCHARGED 26,600 MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index) 12,847.65 KILOGRAMS DISCHARGED	Copper concentration in on-site surface soil sample SB 8 (PAS-00032616).	
Lead (Pb)	76 YEARS DISCHARGED 0 MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index) 0.00 KILOGRAMS DISCHARGED	Lead concentration in on-site surface soil sample MW 5S (PAS-00032619). Set to 0 since less than HF.	
Mercury (Hg)	76 YEARS DISCHARGED 5.00 MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index) 2.41 KILOGRAMS DISCHARGED	Mercury concentration in on-site surface soil sample SB 12 (PAS-00032617).	

PAHs (listed in Benzo(a)pyrene Equivalent conversion table)

76 YEARS DISCHARGED
9.0 MG/KG (TOTAL PAH MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)
4.36 KILOGRAMS DISCHARGED

PAHs (others detected)
 76 YEARS DISCHARGED
 10 MG/KG (TOTAL PAH MAX CONCENTRATION)
 0.000001 kg per mg (Merck Index)
4.68 KILOGRAMS DISCHARGED

PCBs
 76 YEARS DISCHARGED
 11 MG/KG (MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)
5.31 KILOGRAMS DISCHARGED

DDx
 0 YEARS DISCHARGED within DDx Timeline
 MG/KG (MAX CONCENTRATION)
 3.785 L per gallon (Merck Index)
 0.000001 kg per mg (Merck Index)
0.00 KILOGRAMS DISCHARGED

Dieldrin
 0 YEARS DISCHARGED within Dieldrin Timeline
 MG/KG (MAX CONCENTRATION)
 3.785 L per gallon (Merck Index)
 0.000001 kg per mg (Merck Index)
0.00 KILOGRAMS DISCHARGED

Dioxins/Furans
 0 YEARS DISCHARGED
 MG/KG (MAX CONCENTRATION)
 0.000001 kg per mg (Merck Index)
0 calc kg COC discharged

SUMMARY CMASS ESTIMATES:

12,847.65 kg Copper
 0.00 kg Lead
 2.41 kg Mercury
 4.36 kg PAHs (Benzo(a)pyrene Equivalent)
 4.68 kg PAHs (Other)
 5.31 kg PCBs
 0.00 kg DDx
 0.00 kg Dieldrin
 0.00 kg Dioxins/Furans

12864.41 MASS (KG) DISCHARGED FROM SURFACE SOIL

Total concentration of PAH compounds for Benzo(a)pyrene Equivalent
<https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample>.

Sum of Benzo(a)pyrene Equivalent conversion concentrations using maximum concentrations found in surface soil sample SB 10 (PAS-00032616).

Data below the Benzo(a)pyrene Equivalent Table

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	7.200	1.0	7.200
Benzo(a)anthracene	8.600	0.1	0.8600
Benzo(b)fluoranthene	6.200	0.1	0.6200
Benzo(k)fluoranthene	6.600	0.01	0.0660
Chrysene	9.700	0.001	0.0097
Dibenz(a,h)anthracene	0.000	1.0	0.0000
Indeno(1,2,3-cd)pyrene	2.700	0.1	0.2700

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 9.0

From surface soil sample SB 10 in PAS-00032616	
Anthracene	2
Acenaphthene	0.48
Acenaphthylene	0
Fluorene	0
Naphthalene	0
Phenanthrene	7.2
2-Methylnaphthalene	0
SUM	9.68

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Kearny Smelting & Refining

936 Harrison Ave

Kearny

NJ

07032

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
7.298E-5	10.0%	Periodic Noncompliance	Poor housekeeping identified in 1984, 1986, and 1994 inspections (damaged drums and wastewater discharged to the ground; raw material, scrap, product, slag, and waste exposed to stormwater) (PAS-00003772-73, 79; PAS-00003766). Hudson Regional Health Commission sent KRSC a Notice of Violation for a discharge of a No. 4 Fuel Oil. The oil leak was from the pipes in the pump house which caused approximately 100 to 150 gallons of No. 4 Fuel Oil to spill to the ground (PAS-00032753-55). On October 11, 1991 KSRC entered into an ACO to address the violations that had occurred throughout the years of operation, including discharging of pollutants and hazardous substances at and around the site and the mismanagement of wastes (PAS-00003777-81).	0.0%	0% Cooperation with conduct of allocation and requests for related information	8.028E-5

AP_ABS

8.028E-5

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Kearny Smelting & Refining

936 Harrison Ave		Kearny	NJ	07032			
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facility Adjusted BS
3.715E-2	10.0%	Periodic Noncompliance	Poor housekeeping identified in 1984, 1986, and 1994 inspections (damaged drums and wastewater discharged to the ground; raw material, scrap, product, slag, and waste exposed to stormwater) (PAS-00003772-73, 79; PAS-00003766). Hudson Regional Health Commission sent KRSC a Notice of Violation for a discharge of a No. 4 Fuel Oil. The oil leak was from the pipes in the pump house which caused approximately 100 to 150 gallons of No. 4 Fuel Oil to spill to the ground (PAS-00032753-55). On October 11, 1991 KSRC entered into an ACO to address the violations that had occurred throughout the years of operation, including discharging of pollutants and hazardous substances at and around the site and the mismanagement of wastes (PAS-00003777-81).		0.0%	0% Cooperation with conduct of allocation and requests for related information	4.087E-2
						AP_ABS	4.087E-2

Allocation Facility Cmass Calculation

Leemilt's Petroleum, Inc.

86 Doremus Avenue

Newark

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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic CMass
Copper	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Mercury	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	2.66	100.00%	-	0.00%	-	100.00%	61.7	64.4	1.018817E-2	0.66
LPAHs	100.00%	3.1	100.00%	-	0.00%	-	100.00%	41.2	44.26	1.018817E-2	0.45
PCBs	100.00%	6.7	100.00%	-	0.00%	-	100.00%	-	6.7	1.018817E-2	0.07
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Leemilt's Petroleum, Inc.

86 Doremus Avenue

Newark

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0	0	0
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0.66	2.734E-6	1.367E-7
LPAHs	0.01	170,000.00	0.45	2.652E-6	2.652E-8
PCBs	12.87	26,000.00	0.07	2.625E-6	3.379E-5
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Leemilt's Petroleum, Inc.

86 Doremus Avenue

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	0	0	0	0	0
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	1.482E-5	0.66	2.9	1.482E-5	7.408E-7
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	1.469E-5	0.45	2.05	1.469E-5	1.469E-7
PCBs	12.87	26,000.00	20,066.54	25,795.56	3.339E-4	0.07	8.61	3.339E-4	4.297E-3
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Leemilt's Petroleum, Inc.

86 Doremus Avenue

Newark

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	No information on discharge flows or COCs...estimating based on Chevron
	# days/week discharged	No Operational Effluent or Process Discharge
	# weeks/yr discharged	Assume storm water flow only directly to river
3,020,565	# gals/yr directly discharged PAP00084091	
	4.08 ft; 30yr average annual precipitation per Rutgers information	
43,560	ft2 per acre	
2.27	acres	PAP-00195386
100%	Percent Precip to River	
1985	Yr Ops started	
1997	Yr Ops ceased	
12	calc #yrs facility operated	
Copper (Cu)		
12	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
12	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
12	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHS		
12	#yrs facility discharged	Estimated based on Chevron
7.50	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as HPAHs	
0.45	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
61.74	calc kg COC discharged	
LPAHs		
12	#yrs facility discharged	
7.50	calc mg/L O&G	Estimated based on Chevron
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as LPAHs	
0.30	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
41.16	calc kg COC discharged	
PCBs		
-7	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-12	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
3	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
12	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
13	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
1	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
-9	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
61.74	kg HPAHs	
41.16	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08333333 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	
	15.3 ACRES - TOTAL SITE AREA (acres)	PAP-00086173	Another source states that the property is 14.5 acres (FDR page 1; PAP-00066677)
	4.5 ACRES - AFFECTED AREA	FDR page 4: Area A consists of 2.5 undeveloped acres located south of the West Yard. Additionally, based on google earth imagery, and creating polygons using measuring tool, an additional 2 acres of bare soil surrounding the tanks in the West and East Yard combined (grassy areas, see image on FDR page 4) were estimated. Total of 4.5 acres of exposed soil.	
	4,046.86 METERS ² /ACRE		
	18,211 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	2 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED TO PASSAIC RIVER	
	1985 Year site operations began	Operated and owned by Power Test Realty Company Limited Partnership (PTRC, an affiliate of Leemilt's Petroleum Inc.) (FDR page 1)	
	2013 Year site ownership ceased	Year PTRC sold the Newark Terminal (FDR page 3)	
	28 NUMBER YEARS DISCHARGE		
	50.990436 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1962.5 KG/M3 SOIL DENSITY	Fill is composed of a mixture of sand, silt, and gravel with varying amounts of brick fragments, rocks, wood and other debris (PAP-00066671, PDF page 8). Used "silty sand and gravel" soil type from http://structx.com/Soil_Properties_002.html . Bulk density range 1442 KG/M3 to 2483 KG/M3, so use average.	
	100,069 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
Copper (Cu)	28 YEARS DISCHARGED 0 MG/KG (MAX CONCENTRATION)	The table on FDR page 13 lists the maximum concentration found in onsite soils at AOC4-18GW collected from a depth of 2.5 - 3.0 ft bgs (PAP-00086279, pdf page 123). Set to 0 since less than HF.	
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
Lead (Pb)	28 YEARS DISCHARGED	Maximum concentration in onsite soils (From Chevron FDR Page 10, Table) Concentration set to 0 mg/kg because the FDR incorrectly has a concentration of 84,200 mg/kg. The referenced source shows a maximum lead concentration of 8,200 mg/kg (PAP-00339532). This is set to 0 mg/kg because it is less than HF.	
	0 MG/KG (MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		

PAHs (listed in Benzo(a)pyrene Equivalent conversion table)

28 YEARS DISCHARGED

26.586 MG/KG (TOTAL PAH MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)

3 KILOGRAMS DISCHARGED

PAHs (others detected)

28 YEARS DISCHARGED

MG/KG (TOTAL PAH MAX CONCENTRATION)

31.02

0.000001 kg per mg (Merck Index)

3 KILOGRAMS DISCHARGED

PCBs

28 YEARS DISCHARGED

67 MG/KG (MAX OF REPORTED CONCENTRATIONS)

0.000001 kg per mg (Merck Index)

7 KILOGRAMS DISCHARGED

SUMMARY CMASST ESTIMATES:

0.00 kg Copper

0.00 kg Lead

2.66 kg PAHs (Benzo(a)pyrene Equivalent)

3.10 kg PAHs (Other)

6.70 kg PCBs

12.47 MASS (KG) DISCHARGED FROM SURFACE SOIL

Total concentration of PAH compounds for Benzo(a)pyrene Equivalent
<https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample>.

NOTE: MAX CONCENTRATIONS FOUND IN SURFACE SAMPLE ID A-2A (0.0-0.5 FT) (PAP-00066671, PDF pg 38). RESULTS IN MG/KG.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	19.000	1.0	19.0000
Benzo(a)anthracene	12.000	0.1	1.2000
Benzo(b)fluoranthene	23.000	0.1	2.3000
Benzo(k)fluoranthene	26.000	0.01	0.2600
Chrysene	26.000	0.001	0.0260
Dibenz(a,h)anthracene	2.800	1.0	2.8000
Indeno(1,2,3-cd)pyrene	10.000	0.1	1.0000

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 26.6

Sample A-2A (PAP-00066708)

Anthracene	2.2
Acenaphthene	1.1
Acenaphthylene	0.52
Fluorene	1.2
Naphthalene	0
Phenanthrene	26
SUM	31.02

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Leemilt's Petroleum, Inc.

86 Doremus Avenue

Newark

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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
3.395E-5	0.0%	Historically Compliant or No Evidence	According to the PA/SIR, approximately 1,500 cubic yards of soil and debris were illegally placed in two piles at Area A in 1996. The material was subsequently removed (PAP-00084093). However, no indication disposal was by Leemilt. The PA/SIR also identified several NJDEP case numbers for spills (PAP-00084077, 91).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.716E-5
						AP_ABS 2.716E-5

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Leemilt's Petroleum, Inc.

86 Doremus Avenue

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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
4.298E-3	0.0%	Historically Compliant or No Evidence	According to the PA/SIR, approximately 1,500 cubic yards of soil and debris were illegally placed in two piles at Area A in 1996. The material was subsequently removed (PAP-00084093). However, no indication disposal was by Leemilt. The PA/SIR also identified several NJDEP case numbers for spills (PAP-00084077, 91).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	3.438E-3
						AP_ABS 3.438E-3

Allocation Facility Cmass Calculation

Legacy Vulcan Corporation

600 Doremus Ave

Newark

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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic CMass
Copper	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	0.00%	-	100.00%	81.4	81.43	1.018817E-2	0.83
Mercury	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	6.66	100.00%	-	0.00%	-	100.00%	16.5	23.18	1.018817E-2	0.24
LPAHs	100.00%	37.72	100.00%	-	0.00%	-	100.00%	11.0	48.73	1.018817E-2	0.5
PCBs	100.00%	56.29	100.00%	-	0.00%	-	100.00%	-	56.29	1.018817E-2	0.57
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Legacy Vulcan Corporation

600 Doremus Ave

Newark

NJ

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0.83	2.592E-7	2.592E-9
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0.24	9.841E-7	4.920E-8
LPAHs	0.01	170,000.00	0.5	2.921E-6	2.921E-8
PCBs	12.87	26,000.00	0.57	2.206E-5	2.839E-4
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Legacy Vulcan Corporation

600 Doremus Ave

Newark

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	2.822E-4	0.83	902.08	2.822E-4	2.822E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	5.333E-6	0.24	1.04	5.333E-6	2.667E-7
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	1.618E-5	0.5	2.25	1.618E-5	1.618E-7
PCBs	12.87	26,000.00	20,066.54	25,795.56	2.805E-3	0.57	72.36	2.805E-3	3.610E-2
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Legacy Vulcan Corporation

600 Doremus Ave

Newark

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	Direct Discharge to Newark Bay where the Passaic River enters.
	# days/week discharged	1971 Waste Effluent Survey 538,7000 gallons per year
	# weeks/yr discharged	1976 NJPDES Application 10000 gpd
4,518,500	# gals/yr directly discharged	Facility not connected to PVSC System
4.08	ft; 30yr average annual precipitation per Rutgers information	
acres		
43,560	ft2 per acre	
acres		
50%	Percent Precip to River	
1952	Yr Ops started	
1975	Yr Ops ceased	
23	calc #yrs facility operated	
Copper (Cu)		
23	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		Lead Data: 4/73 Pb: .015-.076 mg/l (PAP-00217718) ; 1971 Pb=.5 mg/l
23	#yrs facility discharged	10/73: Pb .003-.090 mg/l (PAP-00219175)
0.21	calc mg/L COC discharged	11/73: Pb .001-.009 mg/l (PAP-00219176)
3.785	L per gallon (Merck Index)	3/74: Pb 0.16-.45 mg/l (PAP00219181)
0.000001	kg per mg (Merck Index)	4/74: Pb 0.14-.65 mg/l (PAP-00188992)
81.43	calc kg COC discharged	6/74: Pb .004-.3 mg/l (PAP-00219184)
Mercury (Hg)		
23	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
23	#yrs facility discharged	1971 TOC = 28 mg/l
28.00	calc mg/L TOC	
2.5%	% TOC that is considered O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as HPAHs	
0.0	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
16.52	calc kg COC discharged	
LPAHs		
23	#yrs facility discharged	1971 TOC = 28 mg/l
28.00	calc mg/L TOC	
2.5%	% TOC that is considered O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as LPAHs	
0.0	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
11.01	calc kg COC discharged	
PCBs		
23	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
23	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
23	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
23	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
23	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
23	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
23	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
81.43	kg Lead	
-	kg Mercury	
16.52	kg HPAHs	
11.01	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs

Direct Discharge Information

4.08 FEET/YEAR AVERAGE PRECIPITATION

ASSUMPTIONS, REFERENCES

Long term average annual precipitation includes floods and hurricane events occurring over time.

COMMENTS/NOTES

Data from Rutgers University.

29 ACRES - TOTAL SITE AREA (acres)

29 acres (FDR p 1, PAS-00010493 p 9)
Other docs say 9.5 acres (PAP-00188306, PAP-00362420, PAP-00364113)

19 ACRES - AFFECTED AREA

Rough estimate of site area with exposed fill determined from review of Figure 1-2 (PAP-00364294) of the 1995 RI (PAP-00364113 p 182). Estimating that 33% of the site had buildings

4,046.86 METERS²/ACRE77,457 METERS² (AFFECTED AREA)

0.0001 METERS/YEAR (ERODED SOIL THICKNESS)

For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.

8 METERS³/YEAR (ERODED SOIL VOLUME)

VOLUME/YEAR DISCHARGED TO DITCHES AND PLUM CREEK

1952 Year site operations began

Kolker Chemical Co [later Vulcan] acquired facility (FDR p 1, PAP-00188319)

1975 Year site processing and storage operations ceased

Vulcan sold to Inland in 1974 (FDR p 1, PAP-00186853)

Vulcan/Inland terminated operations of chlor-alkali and chloromethanes plants in May 1975 and dismantled plants in 1975-76 (FDR p 1, PAP-00186853). In 1975 operations were transferred from chemical manufacturing to solvent recovery (PAS-00091936 p 3)

23 NUMBER YEARS DISCHARGE

178 METERS³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)1,963 KG/M³ SOIL DENSITY

Surface soil is fill material with variable composition, including ash, wood, cinders, coal, smelter slag, brick, concrete rubble, cobble, sand, and gravel chips (PAP-00362420 p 16). Density of silty sand and gravel ranges from 1442 to 2483 kg/m³, so the average is used. (http://structx.com/Soil_Properties_002.html)

349,621 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)

Site is located on regional Historic Fill (FDR p 5)

Same concentrations used for Safety Kleen calculations are used here

Copper (Cu)

23 YEARS DISCHARGED

0 MG/KG (MAX CONCENTRATION)

Copper concentration set to 0 mg/kg based on the conclusion accepted by NJDEP that metallic constituents detected in soil are related to operations conducted by Balbach (pre-1952) (FDR page 5)

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

Lead (Pb)

23 YEARS DISCHARGED

0 MG/KG (AVERAGE CONCENTRATION)

Lead concentration set to 0 mg/kg based on the conclusion accepted by NJDEP that metallic constituents detected in soil are related to operations conducted by Balbach (pre-1952) (FDR page 5)

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

Mercury (Hg)

23 YEARS DISCHARGED

0.0 MG/KG (MAX CONCENTRATION)

AEC 6 consisted of several tanks which were associated with chemical processing (FDR page 19)

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

Legacy Vulcan FT Mass- Final.XLSX

PAHs (listed in Benzo(a)pyrene Equivalent conversion table)

23 YEARS DISCHARGED
19.0 MG/KG (TOTAL PAH MAX CONCENTRATION)
 0.000001 kg per mg (Merck Index)
7 KILOGRAMS DISCHARGED

PAHs (others detected)
 23 YEARS DISCHARGED
 108 MG/KG (TOTAL PAH MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)
38 KILOGRAMS DISCHARGED

PCBs

23 YEARS DISCHARGED
 161 MG/KG (MAX OF REPORTED CONCENTRATIONS)

0.000001 kg per mg (Merck Index)
56 KILOGRAMS DISCHARGED

DDx
 0 YEARS DISCHARGED within DDx Timeline
 MG/KG (MAX CONCENTRATION)
 3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

Dieldrin
 0 YEARS DISCHARGED within Dieldrin Timeline
 MG/KG (MAX CONCENTRATION)
 3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

Dioxins/Furans
 0 YEARS DISCHARGED
 MG/KG (MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)
0 calc kg COC discharged

Total concentration of PAH compounds for Benzo(a)pyrene Equivalent
<https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample>

Surface soil samples with highest concentrations from sample SB-5 (1.0-1.5 ft bgs) (PAP-00364271, PAP-00188365-6)
 Historic fill was not a consideration for PAH concentrations for the purpose of this calculation.

Data below the Benzo(a)pyrene Equivalent Table

Concentration reflects a single sample, SB-5 (PAP-00364271). Historic fill was not a consideration for PAH concentrations for the purpose of this calculation.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benz(a)pyrene	7.300	1.0	7.3000
Benzo(a)anthracene	17.000	0.1	1.7000
Benzo(b)fluoranthene	26.000	0.1	2.6000
Benzo(k)fluoranthene	12.000	0.01	0.1200
Chrysene	29.000	0.001	0.0290
Diben(z,a,h)anthracene	6.100	1.0	6.1000
Indeno(1,2,3-cd)pyrene	12.000	0.1	1.2000

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = **19.0**

Kolker Chemical Company's use of PCBs at the facility is documented (FDR pages 2, 4)

The highest concentration of PCBs was detected in a surface soil sample collected from soil boring SB-24 at a depth of 0 to 0.5 feet bgs. (FDR page 6; PAP-00364274)

All PAH data from SB-5 (1.0-1.5 ft bgs) (PAP-00188365-6)	
Fluoranthene	56
Phenanthrene	49
Athracene	2.9
SUM	107.9

SUMMARY CMASST ESTIMATES:

0.00 kg Copper
 0.00 kg Lead
 0.00 kg Mercury
 6.66 kg PAHs (Benzo(a)pyrene Equivalent)
 37.72 kg PAHs (Other)
 56.29 kg PCBs
 0.00 kg DDx
 0.00 kg Dieldrin
 0.00 kg Dioxins/Furans

100.67 MASS (KG) DISCHARGED FROM SURFACE SOIL

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Legacy Vulcan Corporation

600 Doremus Ave

Newark

NJ

07105

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
2.840E-4	5.0%	Occasional Noncompliance	New Jersey State Department of Health had issued "pollution abatement orders" to Vulcan in 1969 (PAS-00058707). Vulcan was given notice to install and provide wastewater treatment and disposal facilities, and to cease discharging "industrial waste or polluting matter" into the Passaic River (PAP-00217398).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.414E-4
						AP_ABS 2.414E-4

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Legacy Vulcan Corporation

600 Doremus Ave

Newark

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07105

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
3.611E-2	5.0%	Occasional Noncompliance	New Jersey State Department of Health had issued "pollution abatement orders" to Vulcan in 1969 (PAS-00058707). Vulcan was given notice to install and provide wastewater treatment and disposal facilities, and to cease discharging "industrial waste or polluting matter" into the Passaic River (PAP-00217398).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	3.069E-2
						AP_ABS 3.069E-2

Allocation Facility Cmass Calculation

National Standard LLC

714-716 Clifton Avenue

Clifton

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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge %	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COCHistoric CMass
Copper	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	2.32%	1,020.00	100.00%	-	23.66	1.018817E-2	0.24
Mercury	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	-	100.00%	-	2.32%	0.01	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	2.32%	0.01	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

National Standard LLC

714-716 Clifton Avenue

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0.24	7.534E-8	7.534E-10
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0	6.368E-12	3.184E-13
LPAHs	0.01	170,000.00	0	8.990E-12	8.990E-14
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

National Standard LLC

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	8.200E-5	0.24	262.17	8.200E-5	8.200E-7
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	3.451E-11	0	0	3.451E-11	1.726E-12
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	4.979E-11	0	0	4.979E-11	4.979E-13
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

National Standard LLC

714-716 Clifton Avenue

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Yantacaw	Bypass	0.00%	0.00%	Did not connect to PVSC until 1973

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	Limited information on COCs
	# hours/per day discharged	Discharge rates to PVSC in 1981
	#days/week discharged	10,000 gpd Process Water
	#weeks/yr discharged	3000 gpd Sanitary
4,745,000	calc gal/yr discharge PAP-00196914	
1973	Yr Ops started	
1976	Yr Ops ceased	
3	calc #yrs facility operated	Yantacaw Bypass
Copper (Cu)		
3	#yrs facility discharged	
-	calc mg/L COC discharged	TRI reports to USEPA
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
3	#yrs facility discharged	
	calc mg/L COC discharged	Per TRI report to USEPA 340 kg/yr lead discharged
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,020.00	calc kg COC discharged	
Mercury (Hg)		
3	#yrs facility discharged	
-	calc mg/L COC discharged	TRI reports to USEPA
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAhs		
3	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as HPAHs	
0.00012	calc mg/L HPAHs	Based on Surface Water sampling
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.006	calc kg COC discharged	
LPAHs		
3	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as LPAHs	
0.00012	calc mg/L LPAHs	Based on Surface Water sampling
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.006	calc kg COC discharged	
PCBs		
4	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	TRI reports to USEPA
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
0	#yrs facility discharged within DDX Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
4	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
3	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
4	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
4	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
3	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
-	kg Copper	
1,020.00	kg Lead	
-	kg Mercury	
0.0065	kg HPAHs	
0.0065	kg LPAHs	
-	kg PCBs	
-	kg DDX	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	
	# days/week discharged	Discharge to Weasel Brook
	# weeks/yr discharged	7500 gpd non contact cooling water
3,650,000	# gals/yr directly discharged PAP-001969114	2500 gpd air compressor water
4.08	ft; 30yr average annual precipitation per Rutgers information	Credit for NJPDES Permit for 1985-1987
acres		
43,560	ft ² per acre	
1938	Yr Ops started	
1987	Yr Ops ceased	
49	calc #yrs facility operated	
Copper (Cu)		
49	#yrs facility discharged	
	calc mg/kg	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
49	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
49	#yrs facility discharged	
-	calc mg/L COC discharged	TNI Reports to USEPA
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAhs		
49	#yrs facility discharged	
0.00012	calc mg/L COC discharged	Based on Surface Water sampling
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.0812	calc kg COC discharged	
LPAHs		
49	#yrs facility discharged	
0.00012	calc mg/L COC discharged	Based on Surface Water sampling
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.0812	calc kg COC discharged	
PCBs		
40	#yrs facility discharged within PCBs Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
38	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
49	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
42	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
-	kg HPAhs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

National Standard LLC

714-716 Clifton Avenue

Clifton

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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
7.538E-10	5.0%	Occasional Noncompliance	On August 14, 1972 PVSC inspectors collected samples of discharges from site outfalls, and analysis showed the samples "were polluting." On August 16, 1972, PVSC directed that they cease polluting at once. National Standard addressed the issue right away (PAS-00034750-52). NJDEP issued an Administrative Order and Notice of Civil Administrative Penalty Assessment to National Standard in August 1987 due to improper hazardous waste storage and management (PAS-00004222-28). According to a Disruption and Closure Permit Application, dated June 1, 1989, lead dross (scum from the surface of the molten lead) and soils with elemental lead associated with operations at the site also were placed in onsite landfill; however, investigations, including borings and test pits, did not reveal lead dross in the landfill (PAP-00197231). It was estimated that a total of 170,000 cubic yards of miscellaneous debris was present within the landfilled areas (PAP-00197232).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	6.408E-10

AP_ABS

6.408E-10

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

National Standard LLC

714-716 Clifton Avenue

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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
8.200E-7	5.0%	Occasional Noncompliance	On August 14, 1972 PVSC inspectors collected samples of discharges from site outfalls, and analysis showed the samples "were polluting." On August 16, 1972, PVSC directed that they cease polluting at once. National Standard addressed the issue right away (PAS-00034750-52). NJDEP issued an Administrative Order and Notice of Civil Administrative Penalty Assessment to National Standard in August 1987 due to improper hazardous waste storage and management (PAS-00004222-28). According to a Disruption and Closure Permit Application, dated June 1, 1989, lead dross (scum from the surface of the molten lead) and soils with elemental lead associated with operations at the site also were placed in onsite landfill; however, investigations, including borings and test pits, did not reveal lead dross in the landfill (PAP-00197231). It was estimated that a total of 170,000 cubic yards of miscellaneous debris was present within the landfilled areas (PAP-00197232).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	6.970E-7

AP_ABS

6.970E-7

Allocation Facility Cmass Calculation

Neu Holdings (Eden Wood Corporation)

1 Ackerman Avenue

Clifton

NJ

07011

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge %	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COCHC Mass
Copper	100.00%	-	100.00%	-	2.54%	4,378.17	100.00%	-	111.3	1.018817E-2	1.13
Lead	100.00%	-	100.00%	-	2.54%	46.09	100.00%	-	1.17	1.018817E-2	0.01
Mercury	100.00%	-	100.00%	-	2.54%	1.17	100.00%	-	0.03	1.018817E-2	0
HPAHs	100.00%	-	100.00%	-	2.54%	-	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	2.54%	-	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	2.54%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	2.54%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	2.54%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	2.54%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Neu Holdings (Eden Wood Corporation)

1 Ackerman Avenue

Clifton

NJ

07011

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	1.13	5.400E-7	3.726E-7
Lead	0.01	3,200,000.00	0.01	3.730E-9	3.730E-11
Mercury	0.95	42,000.00	0	7.240E-9	6.878E-9
HPAHs	0.05	240,000.00	0	0	0
LPAHs	0.01	170,000.00	0	0	0
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Neu Holdings (Eden Wood Corporation)

1 Ackerman Avenue

Clifton

NJ

07011

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	4.018E-4	1.13	842.75	4.018E-4	2.773E-4
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	4.060E-6	0.01	12.98	4.060E-6	4.060E-8
Mercury	0.95	42,000.00	4,322.53	41,955.96	6.905E-6	0	0.29	6.905E-6	6.560E-6
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	0	0	0	0	0
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	0	0	0	0	0
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Neu Holdings (Eden Wood Corporation)

1 Ackerman Avenue

Clifton

NJ

07011

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Yantacaw	Bypass	2.32%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	No data on discharge flowrates or COCs
	# hours/per day discharged	Using Schiffenhaus, McCarter Highway to estimate.
	#days/week discharged	Similar Facility/Operation and time periods
	#weeks/yr discharged	
5,500,000	calc gal/yr discharge	
1933	Yr Ops started	
1987	Yr Ops ceased	
54	calc #yrs facility operated	
Copper (Cu)		
54	#yrs facility discharged	From Schiffenhaus, McCarter Highway
3.89	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
4,378.17	calc kg COC discharged	
Lead (Pb)		
54	#yrs facility discharged	From Schiffenhaus, McCarter Highway
0.0410	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
46.09	calc kg COC discharged	
Mercury (Hg)		
54	#yrs facility discharged	
0.00104	calc mg/L COC discharged	From Schiffenhaus, McCarter Highway
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1.17	calc kg COC discharged	
HPAHs		
54	#yrs facility discharged	
-	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as HPAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
54	#yrs facility discharged	
-	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as LPAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
45	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
38	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
54	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
42	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
4,378.17	kg Copper	
46.09	kg Lead	
1.17	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Neu Holdings (Eden Wood Corporation)

1 Ackerman Avenue

Clifton

NJ

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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
3.795E-7	10.0%	Periodic Noncompliance	In 1947, PVSC stream contamination reports documented four incidents of discharge (paper pulp, oily discharge, paperboard) from Clifton Paper Board Company into the Passaic (PAS-00113923, 925, 927, 929). In March and December 1956, Clifton Paper Board received violations for oil and water discharges from a pipe (PAS-00113935; PAS-00113937). The violations were eliminated on the next day in March and on the same day in December. Sewage discharged in 1977 (PAS-00113563). In September 1976, PVSC notified WPBC that they had two of five outlets (002 and 004) were above values that PVSC did not consider acceptable for discharge limits into the Passaic River for suspended solids, turbidity, and pH (PAS-00113566). The Herald News, dated June 1982, noted that the Clifton Mill had been partially gutted by fire in April 1980 and had never reopened (PAS-00113961). There were stained soils in the drum storage area (PAS-00113605).	0.0%	0% Cooperation with conduct of allocation and requests for related information	4.174E-7

AP_ABS

4.174E-7

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Neu Holdings (Eden Wood Corporation)

1 Ackerman Avenue

Clifton

NJ

07011

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
2.839E-4	10.0%	Periodic Noncompliance	In 1947, PVSC stream contamination reports documented four incidents of discharge (paper pulp, oily discharge, paperboard) from Clifton Paper Board Company into the Passaic (PAS-00113923, 925, 927, 929). In March and December 1956, Clifton Paper Board received violations for oil and water discharges from a pipe (PAS-00113935; PAS-00113937). The violations were eliminated on the next day in March and on the same day in December. Sewage discharged in 1977 (PAS-00113563). In September 1976, PVSC notified WPBC that they had two of five outlets (002 and 004) were above values that PVSC did not consider acceptable for discharge limits into the Passaic River for suspended solids, turbidity, and pH (PAS-00113566). The Herald News, dated June 1982, noted that the Clifton Mill had been partially gutted by fire in April 1980 and had never reopened (PAS-00113961). There were stained soils in the drum storage area (PAS-00113605).	0.0%	0% Cooperation with conduct of allocation and requests for related information	3.123E-4

AP_ABS

3.123E-4

Allocator's Determinations Regarding Legal Defenses Raised by Allocation Parties

NEU HOLDINGS

Neu Holdings argues that it has no responsibility for cleanup of the Passaic River or OU2 because all liabilities associated with the operations of the Clifton Mill were discharged as a result of WPBC's bankruptcy. WPBC filed for protection under Chapter 11 of the U.S. Bankruptcy Code, 11 U.S.C. §§101 et seq. (the "Bankruptcy Code"), in the United States Bankruptcy Court for the District of New Jersey (the "Bankruptcy Court") on February 8, 1980. The proceedings were designated *In re Whippany Paper Board Co. Inc.*, Case No. 80-00426 (the "Chapter 11 Proceedings"). FDR at 2. The Clifton Mill ceased operations in April of 1980. *Id.*

The Bankruptcy Court established March 11, 1981 as the last day by which parties holding claims against WPBC could file a proof of claim in order to participate in any distribution from WPBC's bankruptcy estate. EPA had actual knowledge of WPBC's Chapter 11 Proceedings well before that date but elected not to file a proof of claim. On March 31, 1981 (the "Confirmation Date"), the Bankruptcy Court entered an order pursuant to 11 U.S.C. §1129 confirming the Chapter 11 Plan for WPBC. FDR 2. Pursuant to Section 9.1 of the Chapter 11 Plan and Bankruptcy Code Section 1141(d), the confirmation of the Chapter 11 Plan discharged WPBC from any and all "debts" that "arose before the date of such confirmation." PAP-00102386; 11 U.S.C. §1141(d)(1)(A).

EPA has suggested that the bankruptcy discharge does not affect its CERCLA claim because the bankruptcy discharge occurred before EPA initiated a response action for the Passaic River. Section 101 of the Bankruptcy Code defines the terms "debt" and "claim" to have "the broadest possible definition[s] . . . [so] that all legal obligations of [a bankruptcy] debtor, *no matter how remote or contingent*, will be able to be dealt with in [a] bankruptcy case" (emphasis added). As a result of these broad definitions, Courts have recognized that a Chapter 11 debtor's discharge extends to any actual or alleged CERCLA liabilities arising from or relating to the debtor's "pre-confirmation" release of hazardous substances. This is true even if such releases do not become the subject of any investigation or response costs until years (or even decades) after the debtor's Chapter 11 plan has been confirmed. For instance, the Second Circuit held that pre- bankruptcy hazardous substance releases are subject to discharge even if such costs relate to CERCLA sites of which EPA is unaware at the time of the bankruptcy proceeding.

The relationship between environmental regulating agencies and those subject to regulation provides sufficient "contemplation" of contingencies to bring most ultimately maturing payment obligations based on [pre-bankruptcy] conduct within the definition of "claims." True, EPA does not yet know the full extent of the ...costs that it may one day incur and seek to impose upon [the debtor], and it does not yet even know the location of all the sites at which such wastes may yet be found. But the location of these sites, the determination of their coverage by CERCLA, and the incurring of response costs by EPA are all steps that may fairly be viewed, in the regulatory context, as rendering EPA's claim "contingent," rather than as placing it outside the [Bankruptcy] Code's definition of "claim."

U.S. v. The LTV Corporation (In re Chateaugay Corporation), 944 F. 2d 997, 1005 (2nd Cir. 1991); see also *State of New Jersey Department of Environmental Protection v. The IT Litigation Trust (In re IT Group, Inc., Co.)*, 339 B.R. 338, 343-4 (D. Del. 2006) (post-confirmation environmental remediation order issued by the New Jersey Department of Environmental Protection against successor to Chapter 11 debtor was held to have been discharged as a result of the confirmation of the debtor's Chapter 11 plan).

WPBC ceased all operation of the Clifton Mill in April of 1980, when a fire partially gutted the facility. WPBC never resumed operation of the Clifton Mill prior to selling the Mill to Ponte, an unrelated third-party, on October 1, 1987. FDR 3. Thus, even if WPBC's Clifton Mill operations resulted in the release of COCs into the Passaic River (which, as discussed herein, it did not), any such release would have occurred prior to the March 31, 1981 Confirmation Date. Neu Holdings posits that as a result, any CERCLA liability for any COC released prior to the March 31, 1981 Confirmation Date from the WPBC Clifton Mill was discharged in bankruptcy. Having forgone its right to file a proof of claim and participate in the distributions from WPBC's Chapter 11 bankruptcy estate, EPA is now precluded as a matter of federal bankruptcy law from seeking to recover under CERCLA against Neu Holdings, the successor to NPN/WPBC. See 11 U.S.C. §524(a)(2) (providing that a bankruptcy discharge operates as a statutory injunction against any act to collect or recover a discharged debt as a personal liability of the debtor). The bankruptcy discharge is a complete defense to liability and presents a significant litigation risk to EPA should the Agency proceed with a civil case. See *United States v. Davis*, 261 F.3d 1, 26 (1st Cir. 2001) ("party specific discounts may reflect the chances of the United States success in litigation against a given PRP" and it "is appropriate to factor into the equation any reasonable discounts for litigation risks, time savings, and the like that may be justified"); see also *United States v. Fort James Operating Co.*, 313 F. Supp. 2d 902, 909 (E.D. Wis. 2004) ("plaintiffs present a number of good reasons for not attempting to obtain top dollar through litigation, including the risks of litigation").

According to Neu Holdings, "Respondent denies that WPBC released COCs from its operation of the Clifton Plant to the Passaic River and OU 2. Even if it did, WPBC's liability for any such releases was discharged as a matter of law in bankruptcy on March 31, 1981. On February 8, 1980, WPBC commenced a voluntary proceeding under Chapter 11 of the United States Bankruptcy Code, 11 U.S.C. §§101 et seq. (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of New Jersey (the "Bankruptcy Court"), said proceedings having been designated In re Whippny Paper Board Co. Inc., Case No. 80-00426". Neu Holdings state that USEPA was aware at the time of WPBC's bankruptcy proceedings and had an opportunity to participate in the same (PAP-00374507).

On March 31, 1981, the Bankruptcy Court entered an Order confirming WPBC's reorganization plan. Per the plan of reorganization and the bankruptcy code, the confirmation of the reorganization plan discharged WPBC from any and all "debts that arose before the date of such confirmation." (PAP-00102386)

"USEPA has suggested that the bankruptcy discharge does not pose a barrier to USEPA's claim because the bankruptcy discharge occurred long before EPA initiated a response action at the Diamond Alkali Site. However, the Bankruptcy Code Section 101(5) defines a "claim" as

including a right to payment that at the time of a debtor's bankruptcy remains "unmatured" and/or "contingent," and it is well-established that a potential liability may qualify as a "claim" for bankruptcy discharge purposes even if it has not yet fully accrued into a cognizable cause of action under applicable non-bankruptcy law. Collier on Bankruptcy, 101.05 at 101-39 (16th Ed. 2017) (As defined in the Bankruptcy Code, the term "[c]laim' . . . include[s] a cause or action or right to payment that has not yet accrued or become cognizable."). In the environmental context, a Chapter 11 bankruptcy debtor may be discharged from any and all potential liabilities related to a pre-confirmation release or threatened release of hazardous substances even if such release does not become the subject of any investigation and/or resulting response costs until several years (or even decades) after the debtor's Chapter 11 plan has been confirmed.

In this case, WPBC ceased operating the Clifton Plant in April of 1980, before the March 31, 1981 confirmation of its Chapter 11 Plan and never resumed operation of the Clifton Plant before selling it to V. Ponte & Sons on October 1, 1987 (PAS-00113953).

Accordingly, even if WPBC's operation of the Clifton Plant resulted in the release of COCs into the Passaic River (of which there is no evidence), the liability of WPBC for any such release was discharged upon the court's confirmation of its Chapter 11 Plan.

According to the Neu Holdings evidence shows that the Clifton Plant operations during the period of WPBC's ownership and operation did not include COCs and that the Clifton Plant property was not a conduit for discharging COCs into the River. As such, the former Clifton Plant, which is located nearly nine miles from OU2, did not discharge COCs that could have had any material impact to the Passaic River or OU2. Especially considering that Neu Holdings' wholly owned subsidiary contributed approximately \$1.8 million toward lower Passaic River investigation and a removal action for which it had no responsibility at all, Neu Holdings should bear no further liability for the Diamond Alkali Site or OU2.

ALLOCATOR'S DETERMINATION – Neu Holdings has noted several arguments why it should not be held responsible for contamination of OU2 caused by the actions of its predecessor. Neu Holdings has posited a legal argument based on the fact that it acquired the entity at issue after it was discharged in bankruptcy, which it argues provides a complete defense to CERCLA liability. The Allocator leaves legal defenses for consideration during future settlement discussions with EPA, at which time Neu Holdings and EPA can discuss the efficacy of its bankruptcy defense and the litigation risk posed thereby. In addition, Neu Holdings has posited several additional equitable arguments. However, there is insufficient available information to determine whether the situation raised overrides the CERCLA doctrine that a legal corporate successor by merger cannot avoid liability for its predecessors acts or omissions on equitable grounds. Therefore, the Allocator likewise leaves this matter for consideration during future settlement discussions with EPA.

Allocation Facility Cmass Calculation

Newark Group, Inc.

17 Blanchard Street

Newark

NJ

07105

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic CMass
Copper	100.00%	-	100.00%	344.97	0.00%	2,271.05	100.00%	101.9	446.89	1.018817E-2	4.55
Lead	100.00%	-	100.00%	97.40	0.00%	641.24	100.00%	28.8	126.18	1.018817E-2	1.29
Mercury	100.00%	-	100.00%	2.03	0.00%	13.36	100.00%	0.6	2.63	1.018817E-2	0.03
HPAHs	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Newark Group, Inc.

17 Blanchard Street

Newark

NJ

07105

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	4.55	2.168E-6	1.496E-6
Lead	0.01	3,200,000.00	1.29	4.017E-7	4.017E-9
Mercury	0.95	42,000.00	0.03	6.377E-7	6.058E-7
HPAHs	0.05	240,000.00	0	0	0
LPAHs	0.01	170,000.00	0	0	0
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Newark Group, Inc.

17 Blanchard Street

Newark

NJ

07105

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	1.614E-3	4.55	3,383.93	1.614E-3	1.113E-3
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	4.373E-4	1.29	1,397.92	4.373E-4	4.373E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	6.082E-4	0.03	25.52	6.082E-4	5.777E-4
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	0	0	0	0	0
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	0	0	0	0	0
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Newark Group, Inc.

17 Blanchard Street

Newark

NJ

07105

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	Facility in operation from 1912-2003
24	# hours/per day discharged	Discharge to PVSC started in 1926 (through 2003)
6-7	#days/week discharged	Flowrate data:
52	#weeks/yr discharged	1978 Sewer Connection Application - 1275,27500 gallons PAS-00103669
52,800,195	calc gal/yr discharge	1975 Waste Effluent Survey - 317,000 gpd PAP-00114423; PAP-00112870 through PAP-00114638
		1975 Industrial Wastewater Questionnaire - 563,000 gpd PAS-00000441
1926	Yr Ops started	1980 PVSC Heavy Metal Source Determination Study 356000 gpd PAS-00103655
2003	Yr Ops ceased	2003 PVSC Discharge Monitoring Data - 1/03 2688600; 2/03 2042450; 3/03 1655300; 4/03 1788900
77	calc #yrs facility operated	5/03 2678700; 6/03 4422300 (PAP-00114572)
Copper (Cu)		Copper Data: PAP-00114476 thru PAP-00114640
77	#yrs facility discharged	1975 Waste Effluent Survey - Cu=.20 mg/l
0.17	calc mg/L COC discharged	1978 Ind Waste Questionnaire - Cu=.20 mg/l
3.785	L per gallon (Merck Index)	1980 PVSC Heavy Metals Source Determination Study Cu=.316 mg/l
0.000001	kg per mg (Merck Index)	1974-2002 Wastewater Analytical Results - Cu = .042-.64 mg/l
2,616.02	calc kg COC discharged	1994 PVSC Discharge Reports - Cu = .06-1.7 mg/l
Lead (Pb)		Lead Data:PAP-00114476 thru PAP-00114640
77	#yrs facility discharged	1975 Waste Effluent Survey - Pb = 2.1-0 mg/l
.048	calc mg/L COC discharged	1978 Ind Waste Questionnaire - Pb = 1 mg/l
3.785	L per gallon (Merck Index)	1980 PVSC Heavy Metals Source Determination Study Pb = 2999 mg/l
0.000001	kg per mg (Merck Index)	1974-2002 Wastewater Analytical Results - Pb = .004-.942 mg/l
738.64	calc kg COC discharged	1994 PVSC Discharge Reports - Pb = .005-.016 mg/l
Mercury (Hg)		Mercury Data:PAP-00114476 thru PAP-00114640
77	#yrs facility discharged	1980 PVSC Heavy Metals Source Determination Study Pb = .0016 mg/l
0.0010	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
15.39	calc kg COC discharged	
HPAHs		
77	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
77	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
49	#yrs facility discharged within PCBs Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
38	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
77	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
58	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
2,616.02	kg Copper	
738.64	kg Lead	
15.39	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDX	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	From 1912-1926 assume discharge direct to Morris Canal
	# days/week discharged	Same flow as assumed to PVSC tab
	# weeks/yr discharged	
52,800,195	# gals/yr directly discharged	PAP-00112870 through PAP-00114638
4.08	ft; 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft2 per acre	
	acres	
50%	Percent Precip to River	
1924	Yr Ops started	
1926	Yr Ops ceased	
3	calc #yrs facility operated	
Copper (Cu)		Copper Data: PAP-00114476 thru PAP-00114640
3	#yrs facility discharged	
0.17	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
101.92	calc kg COC discharged	
Lead (Pb)		Lead Data: PAP-00114476 thru PAP-00114640
3	#yrs facility discharged	
0.048	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
28.78	calc kg COC discharged	
Mercury (Hg)		Mercury Data: PAP-00114476 thru PAP-00114640
3	#yrs facility discharged	
0.0010	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.60	calc kg COC discharged	
HPAHs		
3	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
3	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
3	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
3	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
3	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
3	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
3	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
3	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
3	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
101.92	kg Copper	
28.78	kg Lead	
0.60	kg Mercury	
	kg HPAHs	
	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Newark Group, Inc.

17 Blanchard Street

Newark

NJ

07105

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
2.106E-6	0.0%	Historically Compliant or No Evidence	A 1970 Stream Contamination Report reported that on April 6, 1970, as a result of negligence, a violation occurred at Newark Boxboard when approximately 500 gal of paper pulp overflowed into a driveway and then into the Blanchard Street storm sewer (PAS-00035386). (non-COC)	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	1.685E-6
						AP_ABS 1.685E-6

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Newark Group, Inc.

17 Blanchard Street

Newark

NJ

07105

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
1.695E-3	0.0%	Historically Compliant or No Evidence	A 1970 Stream Contamination Report reported that on April 6, 1970, as a result of negligence, a violation occurred at Newark Boxboard when approximately 500 gal of paper pulp overflowed into a driveway and then into the Blanchard Street storm sewer (PAS-00035386). (non-COC)	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	1.356E-3
						AP_ABS 1.356E-3

Allocation Facility Cmass Calculation

Newark Morning Ledger Co.

1 Star Ledger Plaza

Newark

NJ

07102

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge %	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COCHistoric CMass
Copper	100.00%	-	100.00%	-	10.03%	208.57	100.00%	-	20.92	1.018817E-2	0.21
Lead	100.00%	-	100.00%	-	10.03%	105.59	100.00%	-	10.59	1.018817E-2	0.11
Mercury	100.00%	-	100.00%	-	10.03%	68.07	100.00%	-	6.83	1.018817E-2	0.07
HPAHs	100.00%	-	100.00%	-	10.03%	785.40	100.00%	-	78.76	1.018817E-2	0.8
LPAHs	100.00%	-	100.00%	-	10.03%	523.60	100.00%	-	52.51	1.018817E-2	0.53
PCBs	100.00%	-	100.00%	-	10.03%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	10.03%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	10.03%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	10.03%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Newark Morning Ledger Co.

1 Star Ledger Plaza

Newark

NJ

07102

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0.21	1.015E-7	7.001E-8
Lead	0.01	3,200,000.00	0.11	3.371E-8	3.371E-10
Mercury	0.95	42,000.00	0.07	1.656E-6	1.573E-6
HPAHs	0.05	240,000.00	0.8	3.343E-6	1.672E-7
LPAHs	0.01	170,000.00	0.53	3.147E-6	3.147E-8
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

ARR2559

Allocation Facility COC Base Scores - Alternative Calculation

Newark Morning Ledger Co.

1 Star Ledger Plaza

Newark

NJ

07102

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	7.552E-5	0.21	158.37	7.552E-5	5.211E-5
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	3.669E-5	0.11	117.31	3.669E-5	3.669E-7
Mercury	0.95	42,000.00	4,322.53	41,955.96	1.579E-3	0.07	66.25	1.579E-3	1.500E-3
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	1.812E-5	0.8	3.55	1.812E-5	9.060E-7
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	1.743E-5	0.53	2.43	1.743E-5	1.743E-7
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Newark Morning Ledger Co.

1 Star Ledger Plaza

Newark

NJ

07102

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	City Dock	CSO	0.11%	61.80%	
2	City Dock	Bypass	9.96%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	No direct discharges to Passaic River. All discharges to PVSC (PVSC Permit) PAP-00000640
24	# hours/per day discharged	Flows:
7	#days/week discharged	1972 = 26506876 gallons
52	#weeks/yr discharged	1978 = 18391824 gallons
26,602,987	calc gal/yr discharge	1986 = 33851114 gallons
		1990 = 33717380 gallons
1966	Yr Ops started	1991 = 20547740 gallons
1992	Yr Ops ceased	PAS-00077049-109
26	calc #yrs facility operated	PAS-00077311-475
Copper (Cu)		
26	#yrs facility discharged	Heavy Metal Source Determination (PAP-00212775) Cu=.133 mg/l
0.08	calc mg/L COC discharged	1971 Permit Discharge Cu=.048mg/l and .058 mg/l
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
208.57	calc kg COC discharged	
Lead (Pb)		
26	#yrs facility discharged	Heavy Metal Source Determination (PAP-00212775) Pb = .061 mg/l
0.040	calc mg/L COC discharged	1971 Permit Discharge Pb = .030 mg/l and .030 mg/l
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
105.59	calc kg COC discharged	
Mercury (Hg)		
26	#yrs facility discharged	Heavy Metal Source Determination (PAP-00212775) Hg = .003 mg/l
0.0260	calc mg/L COC discharged	1971 Permit Discharge Hg = .028 mg/l and .047 mg/l
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
68.07	calc kg COC discharged	
HPAHs		
26	#yrs facility discharged	1971 Permit Discharge Emulsified oils = 6 mg/l and 4 mg/l
5.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as HPAHs	
0.30	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
785.40	calc kg COC discharged	
LPAHs		
26	#yrs facility discharged	1971 Permit Discharge Emulsified oils = 6 mg/l and 4 mg/l
5.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as LPAHs	
0.20	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
523.60	calc kg COC discharged	
PCBs		
12	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
7	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
22	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
26	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
27	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
20	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
10	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
208.57	kg Copper	
105.59	kg Lead	
68.07	kg Mercury	
785.40	kg HPAHs	
523.60	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Newark Morning Ledger Co.

1 Star Ledger Plaza

Newark

NJ

07102

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
1.842E-6	0.0%	Historically Compliant or No Evidence	No information on violations or sloppy practices was identified in the available file material.	0.0%	0% Cooperation with conduct of allocation and requests for related information	1.842E-6
AP_ABS						1.842E-6

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Newark Morning Ledger Co.

1 Star Ledger Plaza

Newark

NJ

07102

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
1.554E-3	0.0%	Historically Compliant or No Evidence	No information on violations or sloppy practices was identified in the available file material.	0.0%	0% Cooperation with conduct of allocation and requests for related information	1.554E-3
AP_ABS						1.554E-3

Allocation Facility Cmass Calculation

Nokia-Lucent Technologies

100 Central Avenue

Kearny

NJ

07032

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic CMass
Copper	100.00%	-	100.00%	-	0.00%	2,428.02	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	0.00%	4,774.53	100.00%	-	0	1.018817E-2	0
Mercury	100.00%	5.91	100.00%	-	0.00%	-	100.00%	-	5.91	1.018817E-2	0.06
HPAHs	100.00%	12.8	100.00%	-	0.00%	6,707.63	100.00%	-	12.8	1.018817E-2	0.13
LPAHs	100.00%	26.09	100.00%	-	0.00%	4,471.75	100.00%	-	26.09	1.018817E-2	0.27
PCBs	100.00%	11,010.36	100.00%	-	0.00%	-	100.00%	-	11,010.36	1.018817E-2	112.18
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Nokia-Lucent Technologies

100 Central Avenue

Kearny

NJ

07032

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0	0	0
Mercury	0.95	42,000.00	0.06	1.434E-6	1.362E-6
HPAHs	0.05	240,000.00	0.13	5.434E-7	2.717E-8
LPAHs	0.01	170,000.00	0.27	1.564E-6	1.564E-8
PCBs	12.87	26,000.00	112.18	4.314E-3	5.553E-2
DDx	1.37	27,000.00	0	3.773E-10	5.170E-10
Dieldrin	0.13	390.00	0	5.225E-11	6.792E-12
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Nokia-Lucent Technologies

100 Central Avenue

Kearny

NJ

07032

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	0	0	0	0	0
Mercury	0.95	42,000.00	4,322.53	41,955.96	1.367E-3	0.06	57.36	1.367E-3	1.299E-3
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	2.945E-6	0.13	0.58	2.945E-6	1.472E-7
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	8.660E-6	0.27	1.21	8.660E-6	8.660E-8
PCBs	12.87	26,000.00	20,066.54	25,795.56	5.487E-1	112.18	14,153.83	5.487E-1	7.062E+0
DDx	1.37	27,000.00	2,516.93	26,974.36	3.973E-7	0	0.01	3.973E-7	5.443E-7
Dieldrin	0.13	390.00	1.27	389.99	1.580E-6	0	0	1.580E-6	2.054E-7
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Nokia-Lucent Technologies

100 Central Avenue

Kearny

NJ

07032

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
710,000	gal discharged per day PAS00080507, PAS00073226, PAP00127263, PAS00080267	From 1925-1984 Wastewater was discharged to municipal treatment plant in S. Kearny and discharged to the Hackensack River
# hours/per day discharged		1978 NPDES Permit Application
5 #days/week discharged		1982 Compliance Monitoring Report, PAS-00080368
52 #weeks/yr discharged		1982 Discharge Reports
184,600.000 calc gal/yr discharge		
1974 Yr Ops started		
1984 Yr Ops ceased		
10 calc #yrs facility operated		FDR pages 2-5, Allocation Figure 12
Copper (Cu)		
10 #yrs facility discharged		
0.35 calc mg/L COC discharged PAP00127737, PAS00080267, PAP00127263		1978 NPDES Permit Application
3.785 L per gallon (Merck Index)		1981 Wastewater Treatment Plant Survey & Discharge Reports
0.000001 kg per mg (Merck Index)		1982 Compliance Monitoring Reports
2,428.02 calc kg COC discharged		
Lead (Pb)		
10 #yrs facility discharged		
0.683 calc mg/L COC discharged PAP00127737, PAS00080267		1978 NPDES Permit Application
3.785 L per gallon (Merck Index)		1981 Wastewater Treatment Plant Survey & Discharge Reports
0.000001 kg per mg (Merck Index)		
4,774.53 calc kg COC discharged		
Mercury (Hg)		
10 #yrs facility discharged		
- calc mg/L COC discharged		
3.785 L per gallon (Merck Index)		1981 Wastewater Treatment Plant Survey & Discharge Reports
0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
HPAhs		
10 #yrs facility discharged		
16.0 calc mg/L O&G PAP00127737, PAS00080267		1978 NPDES Permit Application
10% % O&G that is considered PAhs		1981 Wastewater Treatment Plant Survey & Discharge Reports
60% % COC in O&G considered as HPAhs		
0.96 calc mg/L HPAhs		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
6,707.63 calc kg COC discharged		
LPAHs		
10 #yrs facility discharged		
16.0 calc mg/L O&G PAP00127737, PAS00080267		1978 NPDES Permit Application
10% % O&G that is considered PAhs		1981 Wastewater Treatment Plant Survey & Discharge Reports
40% % COC in O&G considered as LPAHs		
1 calc mg/L LPAHs		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
4,471.75 calc kg COC discharged		
PCBs		
4 #yrs facility discharged within PCBs Timeline		
- calc mg/kg		
0.0075% assumed %mg of material in conveyance carried away via 1L discharge flow through the conveyance		
calc gal/yr discharged		
- calc mg/L COC discharged		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
DDx		
-1 #yrs facility discharged within DDx Timeline		
- calc mg/L COC discharged		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dieldrin		
11 #yrs facility discharged within Dieldrin Timeline		
- calc mg/L COC discharged		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dioxins/Furans		
10 #yrs facility discharged		
- calc mg/L COC discharged		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dioxin/Furan Precursor - 2,4-D		
11 #yrs facility discharged within 2,4-D Timeline		
- calc mg/L COC discharged		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dioxin/Furan Precursor - 2,4,5-T		
11 #yrs facility discharged within 2,4,5-T Timeline		
- calc mg/L COC discharged		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dioxin/Furan Precursor - 2,4,6-TCPP		
2 #yrs facility discharged within 2,4,6-TCPP Timeline		
- calc mg/L COC discharged		
3.785 L per gallon (Merck Index)		
0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Summary DMassCOC for POTW:		
2,428.02 kg Copper		
4,774.53 kg Lead		
- kg Mercury		
6,707.63 kg HPAhs		
4,471.75 kg LPAHs		
- kg PCBs		
- kg DDx		
- kg Dieldrin		
- kg Dioxins/Furans		

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
107,388	# gallons discharged per day (PAP000126621, PAS00073226, PAS00080319, PAS00080368)	PAP-00126844 thru PAP-00127139
	# hours/day discharged	Direct Discharges to Passaic River
5	# days/week discharged	1974 NPDES Permit, PAS-00080368
52	# weeks/yr discharged	1978 NPDES Permit
27,920,880	# gals/yr directly discharged	1980 Selected Substance Report
4.08	ft; 30yr average annual precipitation per Rutgers information	1981 Wastewater Treatment Plant Survey and Discharge Reports
	acres	CREDITS:
43,560	ft2 per acre	NJPDES Discharge limits: Copper .167#/day= 670.5 kg and Lead .042 #/day = 168.63
		Oil and Grease 8.3#/day=3.76 kg/day over 11 years = 15096.4 kg
		1974-1984
1974	Yr Ops started	
1984	Yr Ops ceased	
10	calc #yrs facility operated	FDR page 2-5, Allocation Figure 12
Copper (Cu)		
10	#yrs facility discharged	1974 NPDES Permit
0.1244	calc mg/L COC discharged PAP000126621, PAS00073226, PAS00080319, PAS00080368, PAPO0127363	PAP-00126844 thru PAP-00127139
3.785	L per gallon (Merck Index)	1980 Selected Substance Report
0.000001	kg per mg (Merck Index)	1981 Wastewater Treatment Plant Survey and Discharge Reports
131.47	calc kg COC discharged	1982 Compliance Monitoring Reports
Lead (Pb)		
10	#yrs facility discharged	1974 NPDES Permit
0.0372	calc mg/L COC discharged PAP000126621, PAS00073226, PAS00080368	PAP-00126844 thru PAP-00127139
3.785	L per gallon (Merck Index)	1981 Wastewater Treatment Plant Survey and Discharge Reports
0.000001	kg per mg (Merck Index)	
39.31	calc kg COC discharged	
Mercury (Hg)		
10	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAhs		
10	#yrs facility discharged	
3.258	calc mg/L O&G PAP000126621, PAS00073226, PAS00080368	PAP-00126844 thru PAP-00127139
10%	% O&G that is considered PAHs	1978 NPDES Permit
60%	% COC in O&G considered as HPAhs	1981 Wastewater Treatment Plant Survey and Discharge Reports
0.20	calc mg/L HPAhs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
206.58	calc kg COC discharged	
LPAHs		
10	#yrs facility discharged	
3.268	calc mg/L O&G PAP000126621, PAS00073226, PAS00080368	PAP-00126844 thru PAP-00127139
10%	% O&G that is considered PAHs	1978 NPDES Permit
40%	% COC in O&G considered as LPAHs	1981 Wastewater Treatment Plant Survey and Discharge Reports
0.13	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
138.15	calc kg COC discharged	
PCBs		
4	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-1	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
11	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
10	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
11	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
11	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
2	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
-	kg HPAhs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES																																
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.																																
	147 ACRES - TOTAL SITE AREA (acres)	FDR, Page 1																																	
	30 ACRES - AFFECTED AREA	Rough estimate of site area with exposed fill determined from review of FDR and PAP-00367726.																																	
	4,046.86 METERS ² /ACRE																																		
	121,406 METERS ² (AFFECTED AREA)																																		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.																																	
	12 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED TO PASSAIC RIVER																																	
	1925 Year site operations began	Nokia-Lucent Technologies Inc. (Lucent) operated and owned the facility as Western Electric Company Kearny Works (Kearny Works) from 1925 to 1984 (PAS-00080504).																																	
	1984 Year site processing and storage operations ceased	Sold site to the Union Minerals and Alloys Corporation in May 1984 (PAS-00080509)																																	
	59 NUMBER YEARS DISCHARGE																																		
	716 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)																																		
	1,963 KG/M ³ SOIL DENSITY	Fill reported as fine to coarse sand with silt and fine gravel (PAP-00367705, pdf 62). Bulk density range for silty sand and gravel 1442 KG/M ³ to 2483 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)																																	
	1,406,086 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)																																		
Copper (Cu)	59 YEARS DISCHARGED 0 MG/KG (MAX CONCENTRATION)	Other metals not listed here (i.e not COCs) were detected in onsite soil																																	
	351 mg/kg Copper concentration in on-site surface soil sample F6-8-1 (PAP-00367863). Set to 0 since less than HF.																																		
Lead (Pb)	0.000001 kg per mg (Merck Index) 0.00 KILOGRAMS DISCHARGED																																		
	59 YEARS DISCHARGED 0 MG/KG (MAX CONCENTRATION)	Lead was found in on-site surface soil sample L4-7-1 (2.5-3) at 4,030 mg/kg. (PAP-00367869). Set to 0 since less than HF.																																	
Mercury (Hg)	0.000001 kg per mg (Merck Index) 0.00 KILOGRAMS DISCHARGED																																		
	59 YEARS DISCHARGED 4.20 MG/KG (MAX CONCENTRATION)	Mercury concentration in on-site surface soil sample M8-6-1 (1-1.5) (PAP-00367870).																																	
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	5.91 KILOGRAMS DISCHARGED	Total concentration of PAH compounds for Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample .																																	
	59 YEARS DISCHARGED 9.1 MG/KG (TOTAL PAH MAX CONCENTRATION)	Site is within Historic Fill Area - used maximum PAH concentrations documented in Fill surface soil sample M6-3-1 (PAP-00367848)																																	
	0.000001 kg per mg (Merck Index) 12.80 KILOGRAMS DISCHARGED																																		
PAHs (others detected)	59 YEARS DISCHARGED 19 MG/KG (TOTAL PAH MAX CONCENTRATION)																																		
	0.000001 kg per mg (Merck Index) 26.09 KILOGRAMS DISCHARGED	Data below the Benzo(a)pyrene Equivalent Table																																	
			<table border="1"> <thead> <tr> <th>Contaminant</th> <th>Concentration (mg/kg)</th> <th>Toxic Equivalency Factor</th> <th>Benzo(a)pyrene Equivalents</th> </tr> </thead> <tbody> <tr> <td>Benzo(a)pyrene</td> <td>6.100</td> <td>1.0</td> <td>6.1000</td> </tr> <tr> <td>Benzo(a)anthracene</td> <td>7.800</td> <td>0.1</td> <td>0.7800</td> </tr> <tr> <td>Benzo(b)fluoranthene</td> <td>7.800</td> <td>0.1</td> <td>0.7800</td> </tr> <tr> <td>Benzo(k)fluoranthene</td> <td>3.500</td> <td>0.01</td> <td>0.0350</td> </tr> <tr> <td>Chrysene</td> <td>7.600</td> <td>0.001</td> <td>0.0076</td> </tr> <tr> <td>Dibenz(a,h)anthracene</td> <td>1.000</td> <td>1.0</td> <td>1.0000</td> </tr> <tr> <td>Indeno(1,2,3-cd)pyrene</td> <td>4.000</td> <td>0.1</td> <td>0.4000</td> </tr> </tbody> </table>	Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents	Benzo(a)pyrene	6.100	1.0	6.1000	Benzo(a)anthracene	7.800	0.1	0.7800	Benzo(b)fluoranthene	7.800	0.1	0.7800	Benzo(k)fluoranthene	3.500	0.01	0.0350	Chrysene	7.600	0.001	0.0076	Dibenz(a,h)anthracene	1.000	1.0	1.0000	Indeno(1,2,3-cd)pyrene	4.000	0.1	0.4000
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Indeno(1,2,3-cd)pyrene	4.000	0.1	0.4000																																

PCBs
28

360 gallons of PCB oils on 1981 inventory. Assumed PCB transformers made from 1956-1981 (i.e., PCBs were used up in 1981), based on employee affidavit that PCB transformers were manufactured for 25 years (FDR, Page 8; PAS-00129817). Site operations ended and the property was sold in 1984; therefore, reduced PCB discharge period from 54 to 28 years (1956-1984). Also, the investigation for cleanup occurred in 1985, see below, documenting that that PCB-contaminated soil was still in place Maximum surface soil concentration (FDR, Page 9). Surface sample data on PAS-00129817.

33000 MG/KG (MAX CONCENTRATION)
0.000001 kg per mg (Merck Index)
11,010.36 KILOGRAMS DISCHARGED

PCB mass calculation adjusted to account for area of erosion shown by PAP-00367959, PAP-00367998, PAP-00368003-6
DDT use began in 1940s - assume present between 1940 and 1984. Period of discharge changed.

44 YEARS DISCHARGED within DDX Timeline
2.04 MG/KG (MAX CONCENTRATION)
3.785 L per gallon (Merck Index)

DDT concentration in on-site surface soil sample F6-8-1 (1-1.5 ft bgs) (PAP-00367888).

0.000001 kg per mg (Merck Index)
0.0011 KILOGRAMS DISCHARGED

Dieldrin

20 YEARS DISCHARGED within Dieldrin Timeline
0.0075 MG/KG (MAX CONCENTRATION)

Found in one sample 2.5-3 ft bgs at a low concentration (PAP-00367769)

3.785 L per gallon (Merck Index)
0.000001 kg per mg (Merck Index)

0.000002 KILOGRAMS DISCHARGED

Dioxins/Furans

NONE FOUND IN AVAILABLE DOCUMENTATION
0 YEARS DISCHARGED
0 MG/KG (MAX CONCENTRATION)
0.000001 kg per mg (Merck Index)

0 calc kg COC discharged

SUMMARY CMASST ESTIMATES:

0.00 kg Copper
0.00 kg Lead
5.91 kg Mercury
12.80 kg PAHs (Benzo(a)pyrene Equivalent)
26.09 kg PAHs (Other)
11010.36 kg PCBs
0.001090 kg DDX
0.000002 kg Dieldrin
0.000000 kg Dioxins/Furans

Sample M6-3-1 (PAP-00367848)	
Anthracene	3.7
Acenaphthene	0.98
Acenaphthylene	0.11
Fluorene	0.69
Naphthalene	0.072
Phenanthrene	13
1-methylnaphthalene	0
2-methylnaphthalene	0
SUM	18.552

11055.156230 MASS (KG) DISCHARGED FROM SURFACE SOIL

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Nokia-Lucent Technologies

100 Central Avenue

Kearny

NJ

07032

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
5.553E-2	5.0%	Occasional Noncompliance	Violations of (unspecified) effluent limitations identified by EPA in 1977 (PAS-00073276). A response letter from Western Electric Company addressed the exceedances, stating they were not above limits (PAP-00127236). An inspection report noted that there were two instances in 1981 when the NPDES permit levels were not met (parameters not specified) (PAS-00080369). A Compliance Monitoring Report dated October 1, 1982 stated outfall 002 was out of compliance for soluble copper one time in the previous year (PAP-00127263, 65). A memorandum dated November 12, 1979, stated that partially filled drums of hazardous waste had been consolidated at the O.P. yard, but the practice of tipping the drums to pour out the waste was hazardous and would be discontinued in accordance with New Jersey's new spill law (PAS-00080312).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	4.720E-2

AP_ABS

4.720E-2

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Nokia-Lucent Technologies

100 Central Avenue

Kearny

NJ

07032

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
7.063E+0	5.0%	Occasional Noncompliance	Violations of (unspecified) effluent limitations identified by EPA in 1977 (PAS-00073276). A response letter from Western Electric Company addressed the exceedances, stating they were not above limits (PAP-00127236). An inspection report noted that there were two instances in 1981 when the NPDES permit levels were not met (parameters not specified) (PAS-00080369). A Compliance Monitoring Report dated October 1, 1982 stated outfall 002 was out of compliance for soluble copper one time in the previous year (PAP-00127263, 65). A memorandum dated November 12, 1979, stated that partially filled drums of hazardous waste had been consolidated at the O.P. yard, but the practice of tipping the drums to pour out the waste was hazardous and would be discontinued in accordance with New Jersey's new spill law (PAS-00080312).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	6.004E+0
						AP_ABS 6.004E+0